

170304

**Additional RI  
GROUNDWATER SAMPLING  
PROGRAM STUDY PLAN**

**ECC SITE  
Zionsville, Indiana**

**W65230.C3.00**

**December 11, 1984**

**GLT424/44**

**A021321**

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## Section 1

## SAMPLING OBJECTIVES

The general objectives of the overall ECC groundwater sampling program are to acquire data that will assist the ECC project team in identifying hazardous substances present at the ECC site and in defining the extent of hazardous substance migration in the groundwater. The data generated from the testing of the samples will be used in the development of appropriate remedial action alternatives.

Phase I of the groundwater sampling program was conducted at ECC on July 18 and 19, 1983. Phase II was conducted on November 29 and 30, 1983.

The additional RI groundwater sampling program for ECC has been designed to continue to investigate spacial and temporal groundwater contamination. Of particular interest is potential movement of groundwater contaminants towards nearby residential wells and towards the Northside Sanitary Landfill.

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## Section 2

## SAMPLING LOCATIONS

The locations for collection of the groundwater samples are indicated in Figure 1. Following is a listing of the sample locations. All monitoring wells were installed as part of the REM/FIT program.

## Groundwater

<u>Well Number</u>	<u>Description</u>
ECC- 1A	Shallow monitoring well
ECC- 2A	Shallow monitoring well
ECC- 3A	Shallow monitoring well
ECC- 5A	Shallow monitoring well
ECC- 6A	Shallow monitoring well
ECC- 7A	Shallow monitoring well
ECC- 8A	Shallow monitoring well
ECC- 9A	Shallow monitoring well
ECC-10A	Shallow monitoring well
ECC-11A	Shallow monitoring well

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Section 3  
SAMPLING PROCEDURES

The sampling of the ECC monitoring wells will be divided into three parts: 1) well opening and monitoring, 2) measurement of well volume and water level, 3) evacuation of static water and, 4) sample collection.

1. Well Monitoring and Opening

- a. Take HNU or OVA readings in the immediate vicinity of the well to establish background conditions.
- b. Carefully unlock and unscrew or lift the well cap from the well casing.
- c. Take HNU or OVA readings in the immediate vicinity of the well and within the well casing and well pipe.
- d. If there are any significant HNU or OVA readings near or in the well above background levels, cover the open well and back away.

- e. Review the Health and Safety Plan to determine the need for upgrading safety protection levels.

Continue work at the appropriate level of safety.

2. Measurement of Well Volume and Water Level

- a. Measure the well-casing inside diameter.
- b. Determine the static water level.
- c. Determine the depth of the well.
- d. Calculate the number of linear feet of static water (difference between static water level and total depth of well).
- e. Calculate the static water volume of the well as follows:

$$V = Tr^2(0.163)$$

where:

V = Static volume of well in gallons

T = Linear feet of static water

$r$  = Inside radius of well casing in inches.

0.163 = A constant conversion factor that compensates for the conversion of the casing radius from inches to feet, the conversion of cubic feet to gallons, and pi.

3. Evacuation of Static Water (Purging)

Before a groundwater sample is obtained, the static water will be evacuated (purged) to ensure that the well water sample will be representative of the groundwater. The method used to purge the well will be dependent upon the equipment available and the accessibility of the well. An absolute minimum of five times the well's static volume is recommended for legal cases (EPA, 1977). Alternatively, the well can be purged until the evacuated groundwater temperature and specific conductivity reaches steady-state values.

Consequently, previous monitoring data indicates no significant groundwater contamination. The water removed from shallow monitoring wells during the purging process will be dumped on the ground.

#### 4. Sample Collection

- a. Once the well has been purged a sampling pump and bailer will be used to sample the groundwater in the well. All sampling equipment will be constructed of stainless steel and/or Teflon.
- b. Sampling equipment will be cleaned between monitoring wells by sequentially washing the interior and exterior of the equipment with a TSP solution, an acetone solution, and a final distilled water rinse.
- c. Groundwater samples for extractables, organics, pesticides and inorganic analyses will be obtained from the discharge end of the pump. Samples for volatile organic analysis (VOA) will be collected manually with a stainless steel bailer. Samples from artesian wells will be collected directly into the sample bottles.

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## Section 4

## SAMPLING EQUIPMENT

The following equipment will be used for the ECC groundwater sampling program:

- o Peristaltic sampling pump with battery drive and plastic tubing.
- o Stainless steel 2 inch OD bailer.
- o U.S. EPA sample containers
- o Coleman sample coolers.
- o M-scope.
- o Decontamination equipment.
- o Camera and film.
- o HNU 101 Photoionizer or Foxboro OVA

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## Section 5

## SAMPLE HANDLING AND SHIPPING

All of the groundwater samples to be collected at the ECC site are expected to be low concentration samples. The following handling procedures will be utilized to satisfy chain-of-custody requirements.

1. The sample team will collect the groundwater samples, place the samples into the appropriate premarked sample containers, preserve all inorganic samples in the field and decontaminate the exterior of the sample containers in the field.
2. The sample numbers will be taken to a clean area for paperwork processing and packaging of the samples.
3. The preparation area team will complete the required paperwork for each sample, place the samples into the appropriate cooler, pack the samples in the cooler with ice and insulating packing materials, and place the appropriate completed paperwork inside the cooler cover.

4. Once the cooler is packed and a final check indicates everything is in order, the cooler will be closed and sealed with two custody seals and packing tape.
5. Sample coolers will be transported to the nearest Federal Express office and shipped via overnight delivery to the designated contract laboratory. Sample case number, number of coolers, number of samples and the airbill numbers will be telephoned to the SMO on the day following cooler shipment.

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## Section 5

### HEALTH AND SAFETY PLAN

The following health and safety plan (H&SP) has been prepared by CH2M HILL, specifically for the additional RI activities at the ECC site.

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Section 6

SOIL SAMPLING TRIP INSTRUCTIONS

A. PERSONNEL

ASSIGNMENT

Randy Weltzin

Surveyor

Jeff Keiser

Surveyor, Sampler

Mark Lepkowski

Sample Team Leader

Meg Morrison

Decon. Tech., Sampler

B. SITE DATA

Location:

Approximately 10 miles north of  
Indianapolis, Indiana, near Zions-  
ville, Indiana.

Telephones:

None available at the site.

Site Conditions:

Much better!! All drums gone; all  
bulk liquids gone; all portable  
bulk tanks gone; contaminated  
lagoon water gone; pond backfilled;  
site capped and seeded.

Lodging: Individual rooms at Red Roof Inn  
(North) just off US 421  
(317-872-3030) near Zionsville.

C. TENTATIVE SCHEDULE

<u>Date</u>	<u>Time</u>	<u>Activity</u>
12/11	3 p.m.	Leave Milwaukee; drive to Indianapolis.
12/12	7 a.m. - Noon	Arrive at site and set up decon. Calibrate instruments. Determine background conditions. Obtain supplies
	1 p.m. - 5 p.m.	Get what we forgot. Begin sampling and surveying.
<u>Date</u>	<u>Time</u>	<u>Activity</u>
12/13	7 a.m. - Noon	Sampling and surveying.
	1 p.m. - 5 p.m.	Sampling and surveying. Drive back to Milwaukee.

D. EQUIPMENT

HNU - 1  
O<sub>2</sub>/Explosimeter - 1  
Rad Mini - 1  
Dosimeter - 1 Per Person  
SCBA (Standby) - 1  
Surveying Equipment - 1 Set  
Decon. Equipment - 1 Hot Line Setup  
Decon. Equipment - 1 Borehole Setup

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D. EQUIPMENT (Continued)

Plastic Pails - 5

Tyveks - 50

Respirator Cartridges - 100

Booties - 50 Pair

Gloves, Rubber - 6 Pair

Gloves, Surgeon - 100 Pair

Ruler

E. OBJECTIVES

- o To delineate horizontal coordinates and elevations of monitoring wells.
- o To determine the depth of water in monitoring wells.
- o To ~~determine~~ sample ~~of~~ groundwater <sup>and</sup> ~~the~~ standing water at the site.
- o To accomplish the work safely and expeditiously (i.e., we do not have a lot of time or an expandable budget).

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analysis.

To send 15 low water samples to the CLP for